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are thus not in direct contact with the endoplasm in which they occur. The author believes them excretory, altho their composition has not been determined. Their presence seems to be correlated with the physiological states leading to division. Actively dividing amebas have few crystals. Those that are not dividing become so loaded up with crystals as to produce opaqueness and to impede locomotion. It has not been possible to determine whether the crystals, once formed, are ever resorbed again.

MONTANA TREMATODES

Faust (Ill. Biol. Monog. Vol. IV, No. I, July 1917) reports on the larval trematodes found infesting the snails of Bitter Root Valley, Montana. Fourteen new species are described from this biologically isolated fauna. Two of these are monostomes, two are holostomes, and ten are distomes. This is a large number of species for so limited a territory. The percentage of infection of the snails is very high.

The author has studied only the cercariæ and the parthenogenetic stages whereby these larvae are produced, the mature worms not being known in any of the species. The principal results of the study are summarized as follows:

1. The history of the germ cells in sporocysts and rediæ shows that they are true parthenogenetic ova, with one polar body and no reduction of chromosomes.

2. Consequently the parthenitæ (sporocysts and rediæ) are not "larval" in any real sense; but we have an alternation of parthenogenetic generations with hermaphrodite generations.

3. The manner of forming the egg cells, the origin of the layers, etc. give evidence that the parthenitæ, cercariæ, and miracidia are homologous, tho distinct, life histories.

4. The trematode integument is mesodermal in origin.

5. The fundamental systems (e.g. excretory, genital, and nervous systems) of the adult are manifest in the cercaria and may be used to show relationships.

6. Holostomes are probably of distome origin, and have, in common with the other families, the alternation of hermaphrodite and parthenogenetic generations.

7. The parthenitæ are to be looked upon as physiologically young, and thus able to continue the parthenogenetic cycle for several generations without the hermaphrodite generation.

8. This youth and the attendant simplicity as compared with the miracidium is to be looked upon as secondary results of parasitism.

THE CRYSTALLINE STYLE OF LAMELLIBRANCHS

Nelson (Jour. Morp. Vol. 31, June 1918) presents a review of the work done on the crystalline style in Lamellibranchs, and contributes some interesting results of his own about this singular organ.

The lining of the intestine and of the communicating style sac is ciliated. This ciliary mechanism is regarded as having power to separate food from the foreign particles within the tract. Little discrimination is shown as to material taken into the stomach.

The style arises as a thin core of bubbly mucus upon which co-axial layers of a gelatinous protein, containing enzymes, are deposited. The style rotates in the sac, according to the observer. He confirms the conclusion that it contains strong amylolytic ferments and believes that the style serves as a means of restoring to the stomach undigested food particles which might otherwise be lost, at least in those forms in which the style sac is not separated from the intestine. The store of ferment is thought to be of peculiar value because of the long period during which feeding is impossible in many mollusks.

REVIVIFICATION OF EXSICCATED EARTHWORMS

Schmidt (Jour. Exp. Zool., October 1918) has shown that earthworms are capable of being revivified after 39 to 48 hours (depending on temperature) of exsiccation in which they have lost one-third to one-half their lenth and volume, and show no signs of life that can be detected. The worms were of course very gradually dried. The body must be allowed to retain its elasticity and the skin its softness, if revival is to be expected. Life was normally regained after as much as 61.6 per cent of the weight of body (nearly 73 per cent of the weight of water in the body) had been lost.

The earthworms differ from lower animals like rotifers and nematodes in that they cannot be preserved thru such long periods of time. This is probably due to the fact that they are more complicated, cannot be so completely desiccated, and hence decomposition